

REMARKS

This responds to the Advisory Action mailed on July 25, 2006.

Claims 1, 4, 7, 8, 15, 20, 21, 24, and 26 are amended, claims 19 and 27 are canceled, and no claims are added; as a result, claims 1, 4, 6-8, 12-17, 20-24, and 26 are now pending in this application.

§103 Rejection of the Claims

Claims 1, 4, 7-8, 12-17, 19-21 were rejected under 35 USC § 103(a) as being unpatentable over *Bokhorst, et al.* (U.S. Patent 6,192,230) in view of *Romans* (U.S. Patent 6,665,520).

Claims 24, 26, and 27 were rejected under 35 USC § 103(a) as being unpatentable over *Bokhorst, et al.* (U.S. Patent 6,192,230) in view of *Romans* (U.S. Patent 6,665,520). And further in view of *Ciccone* (U.S. Patent 6,078,819).

Claims 6, 22 and 23 were rejected under 35 USC § 103(a) as being unpatentable over *Bokhorst, et al.* (U.S. Patent 6,192,230) in view of *Romans* (U.S. Patent 6,665,520) and further in view of *Lindskog, et al.* (U.S. Publication No. 2001/0031626).

Applicants have amended the independent claims to define over the references of record. Independent claim 1 has been amended to recite “a desired sleep interval expressed as a plurality of 802.11 compliant beacon intervals,” and “comparing the desired sleep interval and a time period until the next broadcast time to determine a wake-up time, wherein the wake-up time is set to the end of the desired sleep interval if at least two desired sleep intervals exist before the next broadcast time.” These features are shown in Figure 5 of the application as filed, where the desired sleep interval is equal to two 802.11 compliant beacon intervals, and the broadcast interval is equal to five 802.11 compliant beacon intervals. In the example of Figure 5, the wake-up time is set to the end of the desired sleep interval (504) because two desired sleep intervals exist before the next broadcast time (506).

Bokhorst describes a “TIM message” being broadcast by an access point at regular intervals. See column 4, lines 35-39. Bokhorst does not describe a beacon signal other than a periodic broadcast of TIM messages. Applicants submit that a TIM message of Bokhorst

corresponds to a beacon, and the time between TIM messages of Bokhorst corresponds to a beacon interval.

Applicants respectfully submit that the amendments to claim 1 define over the applied references. For example, col. 5, lines 26-30 of Bokhorst state:

It will be appreciated that the duration of the doze interval is chosen such that the station transceiver is in the awake state prior to the earliest time that the TIM message can arrive. This ensures that no TIM message is lost due to a late switching to the awake state.

As stated by Bokhorst in the above cited portion, Bokhorst *ensures* that the station transceiver is awake for every TIM message (corresponding to every beacon). Accordingly, applicants respectfully submit that Bokhorst does not teach a desired sleep interval expressed as a plurality of beacon intervals.

Further, neither Bokhorst nor Romans, alone or in combination, disclose, teach, or suggest the calculus illustrated in Figure 5 and claimed in claim 1 as “the wake-up time is set to the end of the desired sleep interval if at least two desired sleep intervals exist before the next broadcast time.” The office action mailed 4/24/06 (page 6, discussion of claims 13, 14) alleges that Bokhorst discloses this limitation. Applicant respectfully disagree. The office action cites processor interrupts (142, 148, 152) in an attempt to show that the mobile station of Bokhorst “wakes up upon determining the broadcast time is more than two desired sleep intervals in the future.” Applicants submit that the timing of the cited processor interrupts to not satisfy the statement in question.

Independent claims 8, 15, and 24 have been amended to recite “determining a desired sleep interval as a plurality” of beacon intervals. The claims have been limited to a “plurality” of beacon intervals to make clear a distinction between Bokhorst and the claimed subject matter. As described above, Bokhorst ensures that the station is awake for each beacon. Accordingly, applicants respectfully submit that neither Bokhorst nor Romans, alone or in combination, disclose, teach, or suggest “a desired sleep interval as a plurality” of beacon intervals.

Independent claim 21 has also been amended to recite sleeping for “a plurality of beacon intervals based on traffic volume.” Applicants respectfully submit that claim 21 defines over the references of record at least for the reasons provided with reference to claims 8, 15, and 24, above.

Further, for each of independent claims 1, 8, 15, and 24, the office action alleges that Bokhorst et al. teaches:

2) if no TIM message is received, sleeping for one additional TIM message interval (Figure 6, see 130-1, 132-1, 134-1, 136-1 indicating if there is no traffic data to be received at the mobile stations, the stations will stay asleep for one additional TIM message period; col. 5, line 17 to 62).

Regarding item (2) above, applicants respectfully submit that Bokhorst does not teach as alleged. For example, col. 5, lines 20-25 of Bokhorst state:

The receipt at the mobile stations 1 to 4 of the TIM-1 message triggers the respective doze interval timers 46 (FIG. 2) at the stations, and causes all these stations to go to the doze state for intervals represented by the dashed line intervals 130-1, 132-1, 134-1, and 136-1.

As stated by Bokhorst in the above cited paragraph, the receipt of a TIM message *triggers* timers and *causes* the stations to doze for the cited intervals. Accordingly, Bokhorst does not set the intervals 130-1, 132-1, 134-1, and 136-1 “if no TIM message is received” as alleged in the office action. This is also shown in Figure 6 of Bokhorst where each of intervals 130-1, 132-1, 134-1, and 136-1 are shown beginning after TIM-1.

In the Advisory Action mailed 7/25/06, the examiner states that “it is unclear” what applicants mean by the above arguments relating to item (2). The following paragraph is provided to clarify the comments for the examiner.

The stations of Bokhorst only doze for the cited intervals if the TIM message (the beacon) is received. The TIM message triggers the timers that cause the doze to occur. Bokhorst does not address the scenario of "no TIM message is received." The instant claim language in question, namely "if no beacon is received, sleeping for an additional beacon interval," addresses the case when no beacon is received. The mobile station will sleep for one additional beacon interval "if no beacon is received." Again, applicants respectfully submit that Bokhorst does not describe a scenario where "no beacon is received."

Accordingly, applicants respectfully submit that the independent claims 1, 8, 15, 21, and 24 are in condition for allowance, and that the remaining claims are in condition for allowance at least by virtue of dependency.

Interview Summary

Applicant's representative Dana LeMoine conducted a telephone interview with Examiner Nicholas La on September 20, 2006. Applicant's representative records the interview as follows:

- (A) No exhibits were shown, nor any demonstration conducted.
- (B) The independent claims were discussed.
- (C) The cited references were discussed.
- (D) Applicant's representative proposed to amend the independent claims to make clear that the desired sleep interval is expressed as a plurality of beacon intervals.
- (E) Applicants' representative presented the argument that the references of record do not disclose, teach, or suggest determining a desired sleep interval expressed as a plurality of beacon intervals.
- (F) The Office Action mailed 4/24/06 and the Advisory Action mailed 7/25/06 were discussed.
- (G) The Examiner agreed to consider the amendments and arguments if a Request for Continued Examination is filed.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (952-473-8800) to facilitate prosecution of this application.

Respectfully submitted,

JIEWEN LIU ET AL.

By their Representatives,

Customer Number 45445

952-473-8800

Date September 25, 2006

By

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 25 day of SEPTEMBER 2006.

Kyrstin Ryan

Name

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Signature